

REMARKS

Claims 1, 5, 6, 8-13, 17, 18 and 20-26 are presented for consideration, with Claims 1, 13, 25 and 26 being independent.

Selected dependent claims have been amended to provide an additional scope of protection. In addition, Claims 2, 4, 7, 14, 16 and 19 have been cancelled.

Initially, Claims 2, 4, 7, 14, 16 and 19 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for the reasons set forth in paragraph 2 of the Office Action. Without conceding to the propriety of this rejection, these claims have been cancelled. This rejection is therefore deemed to be moot and should be withdrawn.

All of the claims, i.e., Claims 1, 2, 4-14 and 16-26, stand rejected under 35 U.S.C. §103 as allegedly being obvious over Mitsutake '538 in view of Kato '708, Dynka '825, Banno (JP '731) and Roovers '785. This rejection is respectfully traversed.

Applicants' invention as set forth in Claim 1 is directed to a method for manufacturing an airtight vessel, and includes the steps of fabricating an airtight vessel connected to an evacuation tube, evacuating the inside of the airtight vessel through the evacuation tube while simultaneously baking the entire airtight vessel, and activating a getter disposed in the airtight vessel. After initiating the evacuation step, in a condition where the getter is activated, the evacuation step is continued and the evacuation tube is sealed by heating the evacuation tube.

Claim 13 relates to a method for manufacturing an image-forming apparatus using an airtight vessel containing a plurality of electron emitting devices and image-forming members. Claim 13 includes the same steps as in Claim 1.

Claim 25 relates to a method for manufacturing an airtight vessel, and includes the steps of fabricating an airtight vessel connected to an evacuation tube, evacuating the inside of the airtight vessel through the evacuation tube, and activating a non-evaporable getter disposed in the airtight vessel before baking the airtight vessel. Additional steps include baking the airtight vessel and sealing the evacuation tube, and after baking the entire airtight vessel, reactivating the non-evaporable getter.

Finally, Claim 26 relates to a method for manufacturing an airtight vessel, and includes the steps of fabricating an airtight vessel connected to an evacuation tube, evacuating the inside of the airtight vessel through the evacuation tube, and baking the entire airtight vessel. In addition, an evaporable getter is degassed during the baking step, and a non-evaporable getter is activated after the degassing step and during the baking step. Additionally, the evacuation tube is sealed during the baking step, and after the baking step, the evaporable getter is activated.

In accordance with Applicants' invention, an airtight vessel having a prolonged life and superior performance is provided.

The primary citation to Mitsutake relates to an electron beam apparatus and an image forming apparatus that includes an airtight envelope. An exhaust pipe of the envelope is connected to a vacuum pump and used to evacuate the envelope. Although the Office Action relies on Mitsutake as the primary reference, it acknowledges that, among other differences, Mitsutake differs from Applicants' invention in that it 1) does not require gettering prior to sealing; 2) does not explicitly disclosed simultaneously baking the entire airtight vessel while evacuating; and 3) is unclear on whether the exhaust tube is sealed by heating and whether or not evacuation is continued during the sealing of the exhaust tube.

The Office Action relies on several secondary citations to compensate for the deficiencies in Mitsutake.

It is respectfully submitted, however, that two of the secondary citations, i.e., Kato and Dynka, do not even relate to manufacturing an airtight vessel by use of an evacuation tube. Accordingly, it is respectfully submitted that only through impermissible hindsight would one skilled in the art have relied on these patents and combined their teachings with Mitsutake in the manner proposed in the Office Action. In any event, with respect to Claims 1 and 16, these citations fail to teach or suggest, inter alia, evacuating the inside of the airtight vessel through an evacuation tube while simultaneously baking the entire vessel and, after initiating the evacuation step and in a condition where the getter is activated, continue the evacuation step and seal the evacuation tube by heating the evacuation tube.

In Roovers, a method of sealing a vacuum vessel having a thick wall exhaust tube discloses that it is routine to heat the exhaust tube to seal it and continue baking and pumping until the exhaust tube has been sealed. Roovers does not teach or suggest, however, activating a getter or evacuating and sealing in consideration of an activated getter.

Banno relates to an image display manufacturing method that discloses a second process of sealing an exhaust tube that is performed after vacuum exhaustion by a first process.

The cited art also fails to teach or suggest, inter alia, reactivating a non-evaporable getter after baking the entire airtight vessel as in Claim 25 or using an evaporable getter and a non-evaporable getter as in Claim 26.

It is respectfully submitted, however, that it would not have been obvious to modify Mitsutake in view of the various secondary citations in order to render obvious

Applicants' claimed invention. Accordingly, reconsideration and withdrawal of the rejection of the claims under 35 U.S.C. §103 is respectfully requested.

Accordingly, it is submitted that Applicants' invention as set forth in independent Claims 1, 13, 25 and 26 is patentable over the cited art. In addition, dependent Claims 5, 6, 8-12, 17, 18 and 20-24 set forth additional features of Applicants' invention. Independent consideration of the dependent claims is respectfully requested.

FIFTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

In compliance with the duty of disclosure under 37 C.F.R. §1.56 and in accordance with the practice under 37 C.F.R. §§1.97 and 1.98, the Examiner's attention is directed to the document listed on the enclosed Form PTO-1449. A copy of the listed document is also enclosed.

Accompanying this paper is a check for \$180.00 pursuant to 37 C.F.R. §1.97(c) and §1.17(p).

As will be appreciated, the enclosed patent corresponds to U.S. Patent No. 5,760,538, which was submitted in the Fourth Supplemental Information Disclosure Statement filed September 20, 2001.

It is respectfully requested that the above information be considered by the Examiner and that a copy of the enclosed Form PTO-1449 be returned indicating that such information has been considered.

CONCLUSION

In view of the foregoing, reconsideration and allowance of this application is deemed to be in order and such action is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Scott D. Malpede", is written over a horizontal line.

Attorney for Applicants
Scott D. Malpede
Registration No. 32,533

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200

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